

## ANNEX G

# LOCAL HAZARD MITIGATION PLAN ANNEX

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# Local Hazard Mitigation Plan Annex

## City of Pleasanton and Pleasanton Unified School District

### Introduction

The City of Pleasanton is located in the Tri-Valley region about 40 miles East of San Francisco at the intersection of Interstates 580 and 680. Pleasanton's location is bounded by Dublin on the north, Livermore to the east, the Sunol Valley to the South, and the steep, rugged Pleasanton and main ridges on the West. The City was incorporated in 1894 and currently has an operating budget of \$120,000,000.

The Pleasanton Unified School District has 1,400 employees, has an operating budget of \$104,209,300, and has 16 schools and an Adult and Community Education program.

Pleasanton's population is 63,654 people and covers 22 square miles, based on the 2000 census.<sup>1</sup> Pleasanton's rural character was maintained through the late 1950's, but experienced drastic increases in boundaries and population throughout the 1970's and 1980's. Located at the intersection of I-580/I-680, Pleasanton became a magnet for retail/commercial developers. By the mid-1980's, Pleasanton was the third fastest growing city in California based on economic indicators. The city has emerged as a major job center with many corporate businesses moving their headquarters here. The City is now home to a regional shopping mall and several large business parks, including Hacienda—the largest in Northern California. Pleasanton enjoys a diverse economy with a balanced mix of residential, retail office and light manufacturing uses. Over 3,000 businesses and industries employing over 32,000 people are presently located in Pleasanton.

Pleasanton is a safe, well-educated and high-profile family community with an excellent quality of life. Its schools are among the best in the State.

Interstates 580 and 680 provide east-west and north-south access, respectively, while both the Southern Pacific and Union Pacific Railroads traverse Pleasanton on the routes from the South Bay to the Central Valley. (196,000 is the Average Daily Traffic along Interstate 580 in Pleasanton).<sup>2</sup> The Bay Area Rapid Transit System (BART) is one of the San Francisco Bay's most vital transportation links, averaging about 300,000 trips every day. The eastern terminus for the blue line is at Dublin/Pleasanton. There are 79 trains per day that stop at that station. WHEELS, a bus line operated by the Livermore Amador Valley Transit Authority, serves sixteen local routes serving Pleasanton, Dublin and Livermore.

<sup>1</sup> For complete Census information on this city, see <http://www.bayareacensus.ca.gov>

<sup>2</sup> [http://www.interstate-guide.com/i-580\\_aadt.html](http://www.interstate-guide.com/i-580_aadt.html)

## The Planning Process and Mitigation Activities

The City of Pleasanton last updated the Safety Element to its General Plan in 1996, which includes a discussion of earthquake, fire, flood, hazardous materials, and aviation hazards. In 2002, Pleasanton created a hazard assessment as part of its new Emergency Management Plan.

In October 2003, a telephone survey was conducted for several key businesses in Pleasanton such as: large employers, companies with hazardous materials, event facilities, top sales producers, etc. The survey listed questions on building safety, the number of employees per facility, access control, food service, personnel safety, critical infrastructure, fire prevention, replacement values, and hazardous materials. The data from these surveys along with the following information was used to update Pleasanton's All Hazard Vulnerability Analysis in February, 2004: the Safety Element of Pleasanton's General Plan, ABAG's hazard assessment data, USGS, FEMA's flood maps, CalTrans Seismic Hazard maps, University of California at Berkeley, California State Geological Survey, California Department of Forestry, California Department of Water Resources, California Highway Patrol, Zone 7 Water, and Livermore-Pleasanton Fire Department Hazardous Materials Area Plan, Pleasanton GIS, etc.

Many of the activities conducted by the City as well as Pleasanton's All Hazard Vulnerability Analysis (February 2004) were fed into the planning process for the multi-jurisdictional plan. The City participated in various ABAG workshops and meetings, including the general kick-off meeting and ABAG's Pacific Security conference, etc. In addition, the City has provided written and oral comments on the multi-jurisdictional plan. Finally, Pleasanton provided detailed information on facilities that are viewed as "critical" to ABAG.

Key City staff met on several occasions to identify and prioritize the mitigation strategies appropriate for the City. Staff involved in a meeting on February 14, 2005 included Chief Building Official, EMS Manager from Livermore-Pleasanton Fire Department (LPFD), Fire Marshall from LPFD, Disaster Preparedness Coordinator from LPFD, Planning Director, two Principal Planners, and a Police Captain. The following representatives also attended from Livermore: Building Official, Police Captain, Public Services Director, and the Public Services Manager. The Assistant Director of Public Works from Pleasanton was not able to attend, but discussed with LPFD's Disaster Preparedness Coordinator separately about the mitigation strategies.

Since the school districts and local hospitals were not able to attend the February 14<sup>th</sup> meeting, LPFD met separately with Pleasanton Unified School District and Valley Care Hospital on the mitigation priorities on February 23<sup>rd</sup>.

Another meeting was conducted on March 22<sup>nd</sup> with two Principle Planners, Plan Checker, Assistant Director of Public Works, and LPFD. Additional agencies that attended included Livermore Public Services Manager; Livermore Valley Joint Unified School District, Pleasanton Unified School District, and Zone 7 Water. Las Positas College and CalWater, a private company, were also invited, but did not attend. LPFD met with Valley Care Hospital on March 23<sup>rd</sup> to obtain several of the health mitigation priorities.

In addition to the large group meetings, additional follow up occurred via telephone and email to solidify the mitigation plan and priorities. The Mitigation Plan was also put on the

City of Pleasanton's website, and comments were invited to be sent to LPFD's Disaster Preparedness Coordinator.

After FEMA's review and approval of the Pleasanton Annex to the multi-jurisdictional plan, Pleasanton placed on the City Council agenda a resolution adopting the plan and strategies on January 17, 2006. The mitigation strategies are now an annex to Pleasanton's Emergency Management Plan.

## Hazard and Risk Assessment

The ABAG multi-jurisdictional Local Hazard Mitigation Plan, to which this is an Annex, lists nine hazards that impact the Bay Area, five related to earthquakes (faulting, shaking, earthquake-induced landslides, liquefaction, and tsunamis) and four related to weather (flooding, landslides, wildfires and drought). These hazards also impact this community, with the exception of tsunamis. Pleasanton does not border the Pacific Ocean or the Bay, so tsunamis are not a hazard in this area.

The multi-jurisdictional plan did not detail out hazardous materials or aviation hazards in the City of Pleasanton. This information, along with additional details on flooding in the area, is provided below from Pleasanton's All Hazard Vulnerability Analysis and Pleasanton's Safety Element to the General Plan.

Information on disasters declared in Alameda County is at: <http://quake.abag.ca.gov/mitigation/disaster-history.html>

The City examined the hazard exposure of the City urban land based on the information at ABAG's website at <http://quake.abag.ca.gov/mitigation/pickdbh2.html>. Of the 10,076 urban acres in the City:

- Earthquake Faulting—According to the CGS Alquist Priolo Earthquake Fault Zone information on the ABAG website, the Northern Calaveras fault runs through the City. 386 urban acres are within the CGS study zone.
- Earthquake Shaking—All 10,076 urban acres are in the moderate to high categories of shaking potential, due to the close proximity of the Calaveras Fault, Mt. Diablo Thrust Fault, Greenville Fault and Hayward Fault.
- Earthquake-Induced Landslides— The California Geological Survey has not completed mapping of this hazard in the City of Pleasanton. However, because few areas have been mapped as landslides, this hazard is viewed as similar to that posed by weather-related landslides as shown below.
- Earthquake Liquefaction—6,533 urban acres are in areas of moderate, high or very high liquefaction susceptibility
- Flooding—720 urban acres are in the 100-year FEMA flood plain, while 2,261 urban acres are in the 500 year flood plain
- Landslides—850 urban acres are in mostly existing landslide areas

- Wildfires—903 urban acres are subject to high or very high wildfire threat, while 6,157 urban acres are in wildland-urban interface threat areas
- Dam Inundation—6,294 acres are subject to dam inundation due to the Lake Del Valle Dam. From Pleasanton's All Hazard Assessment, the 235-foot Del Valle Dam impounds a reservoir with a total capacity of 77,100 acre-feet. To provide a flood control reserve, it normally stores from 25,000 to 40,000 acre-feet. (An acre-foot is 325,900 gallons, enough water to cover one acre of land one foot deep.)
- Drought—all acres are subject to drought

The City of Pleasanton also examined the hazard exposure of infrastructure based on the information on ABAG's website at <http://quake.abag.ca.gov/mitigation/pickdbh2.html>. Of the 313 miles of roadway, 3 miles of transit, 4 miles of railroad and 282 miles of underground pipeline in the City (Note that some of the hazards listed below would not affect the underground pipeline in those areas. In addition, these pipelines carry water, petroleum and natural gas.):

- Earthquake Faulting—According to the CGS Alquist-Priolo Earthquake Fault Zone information on the ABAG website, the Northern Calaveras Fault runs through the City. 15 miles of roadway and 13 miles of pipeline are within this zone.
- Earthquake Shaking—313 miles of roadway, 3 miles of transit (BART—Bay Area Rapid Transit District), 4 miles of railroad, and 282 miles of pipeline are in the moderate to high categories of shaking potential
- Earthquake-Induced Landslides— The California Geological Survey has not completed mapping of this hazard in the City of Pleasanton. However, because few areas have been mapped as landslides, this hazard is viewed as similar to that posed by weather-related landslides as shown below.
- Earthquake Liquefaction—201 miles of roadway, 3 miles of transit, 3 miles of railroad, and 175 miles of pipeline are in areas of moderate, high or very high liquefaction susceptibility
- Flooding—22 miles of roadway and 19 miles of pipeline are in the FEMA 100 year flood plain, while 60 miles of roadway, 1 mile of railroad, and 51 miles of pipeline are in the 500 year flood plain
- Landslides—27 miles of roadway and 27 miles of pipeline are in mostly existing landslide areas
- Wildfires—32 miles of roadway and 32 miles of pipeline (water and natural gas) is in a high or very high wildfire threat areas, while 200 miles of roads, 2 miles of transit, 3 miles of railroad and 181 miles of pipeline are in wildland-urban interface threat areas
- Dam Inundation—184 miles of roadway, 1 mile transit, 162 miles of pipeline and 4 miles of railroad are subject to dam inundation
- Drought—is not a hazard for roadways

Finally, the City of Pleasanton examined the hazard exposure of critical healthcare facilities, schools, and city-owned buildings based on ABAG's website at <http://quake.abag.ca.gov/mitigation/pickcrit.html>. Of the critical facilities in the City:

- Earthquake Faulting—No critical facilities are within the Alquist-Priolo Earthquake Fault Zone
- Earthquake Shaking—All 87 critical city-owned facilities, 17 schools, and 10 healthcare facilities (includes hospital, long-term care, primary care and home health agency) are subject to moderate to high earthquake shaking potential
- Earthquake-Induced Landslides— The California Geological Survey has not completed mapping of this hazard in the City of Pleasanton. However, because few areas have been mapped as landslides, this hazard is viewed as similar to that posed by weather-related landslides as shown below.
- Earthquake Liquefaction—54 city-owned facilities, 13 schools and 9 healthcare facilities are in areas of moderate, high or very high liquefaction susceptibility
- Flooding—8 city-owned facilities, 5 schools and 1 hospital are in the FEMA 500 year flood plain; no facilities are in the 100 year flood plain
- Landslides—13 city-owned facilities are in mostly existing landslides areas
- Wildfires—While no schools or health care facilities are located in areas of high or very high wildland fire threat, 22 city-owned facilities are located in these areas. 57 city-owned facilities, 10 schools and 3 health care facilities are in the wildland-urban interface threat areas
- Dam Inundation—41 city-owned facilities, 13 schools and 8 health care facilities are in an area subject to dam inundation
- Drought—drought will not affect city buildings directly

## Hazardous Materials

According to Pleasanton's All Hazard Vulnerability Analysis, the Livermore/Pleasanton area contains some industrial development that may be associated with hazardous materials uses. Land uses involving hazardous materials or other hazards include hazardous waste transfer facilities, paint and paint product manufacturing facilities, semiconductor manufacturers, medical device manufacturers, and petroleum product and natural gas pipelines.

The area is home to numerous businesses and industries that manufacture, store, use, and dispose of hazardous materials and hazardous waste. Some of these businesses are neighbors to urbanized population areas.

In addition to the hazards of stored chemicals, there are hazards of transporting chemicals into and through the area. Most hazardous materials are regularly carried on railroads and the freeways and major roads designated as explosive routes by CALTRANS and the Highway Patrol. The proximity of some of these routes to large numbers of people suggests that an accident involving hazardous materials transportation could reach disaster proportions. The extreme toxicity of some chemicals used in the area and the specialized handling and cleanup procedures required during an accident can close major thoroughfares and necessitate evacuation.

The Union Pacific/Southern Pacific Railroads conduct rail operations in the Pleasanton area. Cargoes of electronics, fabricated metals, plastics, precision machinery, agricultural chemicals, construction materials, rock/sand/gravel aggregates and other hazardous materials are also shipped over the rail lines.

A spill of bulk hazardous materials could result in fire, explosion, toxic cloud or direct contamination of people and property. The effects may involve a local site or many square miles. Health problems may be immediate, such as corrosive effects on skin and lungs, or may be eventual, such as the development of cancer from a carcinogen. Damage to property could range from immediate destruction by explosion to permanent contamination by a persistent hazardous substance.

The I-580 corridor affords a large amount of truck movement from the Bay Area to the Central Valley. At its eastern end, it connects to Interstate 5, the major north-south route through California, and at its west end, Interstate 80, the major east-west route through Northern California. The weigh station operated by the California Highway Patrol at Vasco Road reports that, on a month-by-month basis, an average of 25,000 trucks pass through that facility. Approximately 8% of those trucks, or 2,000 trucks per month, display hazardous materials placards. Assuming each vehicle had an average load weight of 35,000 pounds... that would convert to approximately 35,000 tons of placarded material a month moving through the I-580 corridor.

Because of its proximity to large U. S. Department of Energy facilities, the Livermore/Pleasanton area has a unique risk to public safety by the transportation of quantities of various radioactive materials. In case of an accident, small amounts of radioactive materials can be dislodged from their protective containers and become extremely difficult to locate necessitating evacuation of large areas.

The Livermore-Pleasanton Fire Department Hazardous Materials Area Plan contains additional specific details regarding Hazardous Materials Incident potential.

### Additional Local Flood Information

The following details on flooding from Pleasanton's All Hazard Vulnerability Assessment and the Safety Element from Pleasanton's General Plan were not mentioned in the ABAG plan.

Historically, the Amador Valley has experienced relatively frequent and substantial flooding because many streams which drain large areas of impermeable soils converge in the area. During periods of intense rainfall, runoff rapidly causes stream flows to exceed floodway capacities and inundate adjacent areas of the flat valley floor. Extensive flood channel improvements required of development projects during the past several years have significantly reduced this type of flood hazard.

As a result of good planning and system maintenance, the Livermore-Amador Valley has experienced minimal flood damage compared with other areas of California.

Currently, flood-producing rainfall occurs during the winter months in the Pleasanton area. Storm runoff is concentrated rapidly by the network of tributaries through the hills which discharge into Arroyo Mocho, Arroyo Del Valle and other tributaries to the Arroyo De La Laguna. The tributaries have carved well-defined courses through the hills; but, upon reaching the flat valley, the channels become shallow and inadequate for higher frequency flows.



The main flooding problem is currently caused by the low capacity of the lower reaches of Arroyo De La Laguna, which causes backwater flooding in its tributary channels.

When substantial rainfall does occur, the runoff is rapid and heavy, causing stream-flows to exceed the normal stream courses' capacities and inundates large areas of the flat valley floor. Flooding is not limited to occasions of intense precipitation, however. Flooding may occur following low-intensity precipitation spread over several days, as occurred in storms of 1955 and 1958.

## Flood Control Efforts

Special Drainage District 7 of the Alameda County Flood Control and Water Conservation District (Zone 7) is responsible for providing flood control and water resources to the Livermore-Amador Valley, which includes the Cities of Pleasanton, Dublin and Livermore. To ensure controlled drainage of the Valley's surface water runoff, Zone 7 currently manages 39 miles of flood control channels ranging from concrete lined channels to natural creeks. Streambed channelization along Arroyo De La Laguna, Alamo Canal, Arroyo Mocho, Hewlett Canal, Chabot Canal, Pleasanton Canal and Tassajara Creek has substantially reduced the possibility of extensive flooding, especially by reducing the time of ponding. A major dam on Arroyo Del Valle controls flooding on that waterway.

In September 2002, Zone 7 began the development of the Stream Management Master Plan (SMMP). This plan balances flood protection with water supply, water quality, habitat and environment and recreation and trails objectives for the Valley.

## Aviation Hazards

Although not located within the Pleasanton Planning area, the Livermore Municipal Airport affects land uses in Pleasanton in the form of noise and safety impacts. In addition, the Hacienda Business Park operates a very limited and temporary heliport near Owens and Chabot Drives. Flight paths to and from the heliport are directly over I-580. The Valley Care Medical Center also operates a heliport at its hospital on Santa Rita Road. The heliport is operated on an as-needed basis for emergency medical transportation. (Pleasanton General Plan's Safety Element, 1996).

## Drought

Drought, though a potential problem in the City, is not fully assessed. The City will work with ABAG and various water supply agencies on this issue.

The City plans to work with ABAG to develop specific information about the kind and level of damage to buildings, infrastructure, and critical facilities which might result from any of the hazards previously noted. The ABAG Annex states that ABAG will be doing this work in 2005 through early 2006.

As these impacts are not fully developed, the City and School District have reviewed the hazards identified and ranked the hazards based on past disasters and expected future impacts. The conclusion is that earthquakes (particularly shaking), hazardous material spill, flooding, wildfire, and landslides (including unstable earth) pose a significant risk for potential loss in the City of Pleasanton.

Earthquakes (particularly shaking and earthquake liquefaction), the wildland-urban interface fire threat, hazardous material spills and dam inundation pose a significant risk to Pleasanton Unified School District. In addition, 5 schools are in the 500 year flood plain with none in the 100 year flood plain.

## Mitigation Priorities

As a participant in the ABAG multi-jurisdictional planning process, City of Pleasanton staff helped in the development and review of the comprehensive list of mitigation strategies in the overall multi-jurisdictional plan. The list was discussed at the meetings discussed above on February 14<sup>th</sup> and March 22<sup>nd</sup>, 2005. At the meeting, all of the mitigation strategies were reviewed. The tentative decision on priority was made based on a variety of criteria, not simply on an economic cost-benefit analysis. These criteria include being technically and administratively feasible, politically acceptable, socially appropriate, legal, economically sound, and not harmful to the environment or our heritage.

Over time, we are committed to developing better hazard and risk information to use in making those trade-offs. We are not trying to create a disaster-proof region, but a disaster-resistant one. In addition, several of the strategies are existing City programs.

Pleasanton Unified School District also helped in the development and review of mitigation strategies. They discussed the priorities in the group meetings on February 23 and March 22, 2005 as well as in follow-up meetings, calls and emails with Livermore-Pleasanton Fire Department. All school buildings have been either constructed or modernized between 1991 to the present, with the majority being modernized or built in the last five years. Two schools are currently under construction, and the district office (a wood frame building) was modernized in 1987. Donlon School is the only school still being retrofitted. All school facilities are in full compliance with the Department of the State Architect.

These draft priorities were submitted to the Fire Chief for review and approval. (The Livermore-Pleasanton Fire Department is the agency which is charged with disaster preparedness in the City of Pleasanton.) After FEMA completed the review and approval of the Pleasanton Annex to the multi-jurisdictional plan, Pleasanton placed on the City Council agenda a resolution adopting the plan and strategies on January 17, 2006. The mitigation strategies are now an annex to Pleasanton's Emergency Management Plan.

Draft priorities were submitted to the Assistant Superintendent, Director of Architectural Planning and Management, and the Architect/Building Design Engineer of Pleasanton Unified School District for review and approval. The School District will also place on the agenda for the School Board a resolution adopting the plan and strategies. The mitigation strategies will become an annex to PUSD's Emergency Management Plan.

## The Plan Maintenance and Update Process

Livermore-Pleasanton Fire Department and Pleasanton Unified School District will ensure that monitoring of this Annex will occur. The plan will be monitored on an on-going basis. However, the major disasters affecting our community, legal changes, notices from ABAG as the lead agency in this process, and other triggers will be used.

The Annex will be a discussion item on the agenda of the joint City / District School Board meeting at least once a year following the adoption of the mitigation plan. At that meeting,

the participants will focus on evaluating the Annex in light of technical and political changes during the past year or other significant events. This group will be responsible for determining if the plan should be updated. For Pleasanton Unified School District, the District's Emergency Manager will ensure that annual monitoring of this Annex will occur.

The City of Pleasanton and Pleasanton Unified School District are committed to reviewing and updating this plan annex at least once every five years, as required by the Disaster Mitigation Act of 2000. Livermore-Pleasanton Fire Department and Pleasanton Unified School District will contact ABAG four years after this plan is approved to ensure that ABAG plans to undertake the plan update process. If so, the City and District again plans to participate in the multi-jurisdictional plan. If ABAG is unwilling or unable to act as the lead agency in the multi-jurisdictional effort, other agencies will be contacted, including Alameda County's Office of Emergency Services. Counties should then work together to identify another regional forum for developing a multi-jurisdictional plan.

The public will continue to be involved whenever the plan is updated, and as appropriate, during the monitoring and evaluation process. Prior to adoption of the updates, the City will provide the opportunity for the public to comment on the updates.